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10/725,333	12/02/2003	Kazuo Mitsuhashi	246248US0CONT	1379

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EXAMINER
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NOTE, JANIS L

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 07/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/725,333	Applicant(s) MITSUHASHI ET AL.	
	Examiner Janis L. Dote	Art Unit 1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 April 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/736,150.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>4/13/04</u> . | 6) <input type="checkbox"/> Other: _____  |

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1. This is a continuation, filed on Dec. 2, 2003, of US application 09/736,150, which was filed on Dec. 15, 2000, now US Patent No. 6,656,653 B2.

2. The disclosure is objected to because of the following informalities:

(1) The use of trademarks, e.g., "Coulter Counter" [sic: COULTER COUNTER], at page 52, line 24, has been noted in this application. The trademarks should be capitalized wherever they appears and be accompanied by the generic terminology. This example is not exhaustive. Applicants should review the entire specification for compliance.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

(2) The table at page 147 reports that the primary polymer particles of comparative example 22 comprise 10 wt% of THF insolubles. However, comparative example 22 does not appear to use any cross-linker to form said primary polymer particles. In addition, it is not clear why comparative example 22 is not of

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the invention since it appears to meet every limitation recited in instant claim 2.

Appropriate correction is required.

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

(1) In claims 10 and 12, the recitation "aliphatic alcohol ester" lacks antecedent basis in the specification. See page 7, lines 19-23, of the specification, which disclose an ester-based wax obtained from an aliphatic carboxylic acid and a monovalent or polyvalent alcohol having 20 to 100 carbon atoms.

(2) In claim 12, the recitation "at least two of the three or more wax compounds are aliphatic alcohol esters of an aliphatic carboxylic acid" (emphasis added) lacks antecedent basis in the specification. See page 8, line 20-21, of the specification, which discloses that "at least one" of the waxes is a carboxylic acid of a monovalent or polyvalent alcohol.

(3) The entire recitation in claim 13 lacks antecedent basis in the specification.

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(4) In claim 23, the recitation "R<sup>1</sup> and R<sup>2</sup> . . . represents . . . an alkyl group" lacks antecedent basis in the specification. See page 22, line 3, of the specification, which discloses that said R groups can be an alkyl group having 1 to 8 carbon atoms. The alkyl group recited in claim 23 is broader than the disclosed alkyl group having 1 to 8 carbon atoms, because it includes alkyl groups having more than 8 carbon atoms.

(5) In claim 27, the recitation "10% by volume or less . . . ." (emphasis added) lacks antecedent basis in the specification. See page 39, lines 14-15, of the specification, which discloses "10% by weight or less."

(6) In claim 28, the recitation "5% by volume or less . . . ." (emphasis added) lacks antecedent basis in the specification. See page 39, lines 17-18, of the specification, which discloses "5% by weight or less."

(7) In claim 31, the recitation "at a temperature equal to or greater than T<sub>g</sub> of the primary polymer particle" lacks antecedent basis in the specification. See page 33, lines 8-11, of the specification, which discloses aging (causing the fusion of agglomerated particles to each other) the agglomerate of particles at a temperature of from T<sub>g</sub> to T<sub>g</sub> + 80°C. The upper

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limit, "greater than  $T_g$ ," recited in the instant claim is broader than the disclosed upper limit, because it includes temperatures greater than  $T_g + 80^\circ\text{C}$ .

(8) In claim 37, the recitation "coating at least a substantial portion of the surface . . . with a particulate charge control agent" lacks antecedent basis in the specification. See pages 25 and 31 of the specification.

(9) In claim 48, the recitation "substantially free of [sic] a polyfunctional monomer" lacks antecedent basis in the specification. See pages 18-19 of the specification.

(10) In claim 49, the recitation "0.5 to 5% by weight of a monomer having a Bronsted acidic group . . ." (emphasis added) lacks antecedent basis in the specification. See page 14, lines 4-5, of the specification, which discloses the amounts of 0.05% by weight or more and 5% by weight or less.

(11) In claim 51, the recitation "by dispersing one or more wax compounds in water having a temperature higher than a melting temperature of [sic] the particular wax" lacks antecedent basis in the specification. See page 10, lines 16-20, of the specification, which discloses dispersing the wax in a molten state, i.e., "by heating a mixture of wax, water and emulsifier to the temperature of the melting point of the wax or more."

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4. Claims 1, 4, 5, 7, 12, 20, 21, 26, 27, 32, 33, 40, 48, and 51 are objected to because of the following informalities:

Claim 1, the typographic error "ton r", which should read "toner."

Claim 4, the typographic error "m lting", which should read "melting."

Claim 5, the typographic errors "Th" and "th", which should read "The" and "the", respectively.

Claim 7, the misspelling "acyrllic."

Claim 12, the typographic errors "th", "ar", and "est rs", which should read "the", "are", and "esters", respectively.

Claim 20, the typographic error "r sin", which should read "resin."

Claim 21, the typographic errors "claim d", "th", and "monomerin", which should read "claimed", "the", and "monomer in".

Claim 26, the typographic error "d gree", which should read "degree."

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Claim 26, the second recitation "wherein" is redundant.

Claim 27, the typographic errors "claim d", "ton r", and "av rage", which should read "claimed", "toner", and "average", respectively.

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Claim 32, the phrase "substantially portion" is improper grammar, and should be corrected to read "substantial portion".

Claim 33, the typographic errors "m thod", "wher in", "agglom rate", and "particl s", which should read "method", "wherein", "agglomerate", and "particles".

Claim 40, the typographic errors "Th" and "charg", which should read "The" and "charge", respectively.

Claim 48, the typographic errors "mixtur", "l ast", "polym r", "witha", and "freeof", which should read "mixture", "least", "polymer", "with a", and "free of", respectively.

Claim 51, the typographic errors "temperatureof", "th", and "presenc", which should read "temperature of", "the", and "presence", respectively.

Appropriate correction is required.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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6. Claims 2, 3/2, 7/3/2, 19, 20, 23, 25, and 30-51 are rejected under 35 U.S.C. 112, second paragraph, as being



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indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 is indefinite in the phrase binder resin has a "THF insoluble content of from 10% to 70%" because it is not clear what is the basis of said percentages, e.g., weight or volume.

Claim 19 is indefinite in the phrase "primary polymer particles have a THF insoluble content of from 15% to 70%" because it is not clear what is the basis of said percentages, e.g., weight or volume.

Claim 20 is indefinite in the phrase "particulate resin [sic: resin] has a THF insoluble content of from 5% to 70%" because it is not clear what is the basis of the said percentages, e.g., weight or volume.

Claim 23 is indefinite in the phrase "[t]he toner for the development of an electrostatic image as claimed in claim 1" (emphasis added) for lack of antecedent basis in claim 1, which only recites "[a] toner."

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Claim 25 is indefinite in the phrase "[t]he as claimed in claim 1" because it is not clear what is being claimed.

Claim 30 is indefinite in the phrase "0.005 to 5% of a polyfunctional monomer" because it is not clear what is the basis of said percentages, e.g., weight or mole.

Claim 33 is indefinite in the phrase "between said agglomerating and aging steps" (emphasis added) for lack of antecedent basis in claim 32, which does not recite an aging step.

Claims 34, 38, 39, 41, 43, and 50 are indefinite in the phrase "said aging step" for lack of antecedent basis in claims 32 and 33, which do not recite an aging step.

Claims 35, 40, 42, and 44 are indefinite in the phrase "a second aging step" lacks antecedent basis because claim 32 does not recite a first aging step.

Claims 36, 45, and 48 are indefinite in the phrase "comprising 0.005 to 5% of a polyfunctional monomer" because it is not clear what is the basis of said percentages, e.g., weight or mole.

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7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this

Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f), or (g) prior art under 35 U.S.C. 103(a).

10. Claims 4, 30, 31, and 49 are rejected under 35

U.S.C. 102(e) as being anticipated by US 6,132,921 (Ishiyama).

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Ishiyama discloses a toner comprising an agglomerate of primary resin particles 4 and primary colorant particles, and a wax having a melting point of 35°C, which is within the range of 30 to 100°C recited in instant claims 4 and 30. The primary polymer particles 4 comprise units of styrene, n-butyl acrylate, 1.5 wt% of acrylic acid, and 0.65 wt% of a polyfunctional monomer II. The Tg of the primary polymer particles is 58°C. See resin fine particle dispersion 4 at col. 15, and toner 13 at cols. 21-22. The amounts of 1.5 wt% and 0.65 wt% are, respectively, within the range of 0.5 to 5% by weight recited in instant claim 49, and the range of 0.005 to 5% by weight recited in instant claims 4 and 30. Ishiyama further discloses a method of making said toner comprising agglomerating the primary polymer particles and primary colorant particles to form an agglomerate of particles, where the primary polymer particles are made by emulsion polymerization, and heating the agglomerate of particles at a temperature of 97°C, which is greater than the Tg of the primary polymer particles. See toner 13 at cols. 21-22.

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11. Claim 4 is rejected under 35 U.S.C. 102(b) as being anticipated by US 5,935,751 (Matsuoka).

Matsuoka discloses a toner comprising an agglomerate of primary resin particles and primary colorant particles, and a wax having a melting point of 85°C, which is within the range of 30 to 100°C recited in instant claim 4. The primary polymer particles comprise a crosslinked polyester resin comprising 5 wt% of the polyfunctional monomer trimellitic anhydride. See resin R-4 in Table 1 and example 4 at col. 20. The amount of 5 wt% is within the range of 0.005 to 5% by weight recited in instant claim 4.

12. Claims 1, 2, 3/(1,2), 4-6, 8, 9, and 29 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US 5,976,755 (Yoshida).

Yoshida discloses a toner comprising toner particles comprising a colorant, the negative azo-iron charge controlling agent (1), a binder resin, and an ester wax having a melting point of 65°C, which is within the melting point ranges recited in instant claims 1, 2, 4, and 8. Col. 19, lines 63-65, and toner Z in Table 3. Yoshida's toner Z is made by a suspension polymerization method disclosed at cols. 45-46. The binder resin of the toner comprises a saturated polyester and a styrene-n-butylmethacrylate resin crosslinked with divinyl

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benzene. The divinyl benzene is used in an amount of about 0.24 wt% based on the amount of binder resin, which is within the amount of 0.005 to 5% by weight recited in instant claim 4. The amount of 0.24 wt% is determined from the amounts reported in Tables 2 and 3. The binder resin comprises 65 wt% THF insolubles and a THF soluble portion having a Mw of 126,000. See toner Z in Table 4. The Mw of 126,000 was determined from the Mn of 18,000 and Mw/Mn ratio of 7.0 reported in Table 4. The amount of 65 wt% THF insolubles is within the range of 15 to 70% recited in instant claim 3. The Mw of 126,000 of the THF soluble portion is within the range of 30,000 to 500,000 recited in instant claim 29. The amount binder resin is about 84 wt% of toner Z. The amount of about 84 wt% is determined from the amounts reported in Tables 2 and 3. Because the 65 wt% of the binder resin is THF insolubles, toner Z comprises about 55 wt% ( $84 \text{ wt\%} \times 65 \text{ wt\%}$ ) of THF insolubles, which is within the range of 20 to 70% by weight recited in instant claim 5. Yoshida further discloses that a copolymer of styrene and (meth)acrylic acid can be used instead of the saturated polyester. Col. 23, lines 42-44. The (meth)acrylic acid is within the compositional limitation of a monomer containing a Bronsted acid as recited in instant claim 6.

Instant claims 1, 2, 3/(1,2), 4-6, 8, 9, and 29 are written in product-by-process format. Yoshida does not exemplify making a toner by agglomerating primary polymer particles and primary colorant particles as recited in the instant claims. Yoshida's toner Z is made by a suspension polymerization method disclosed at cols. 45-46. However, as discussed above, Yoshida's toner Z meets the compositional limitations recited in the instant claims. Accordingly, Yoshida's toner Z appears to be the same or substantially the same as the toner made by the method recited in the instant claims. The burden is on applicants to prove otherwise. In re Marosi, 218 USPQ 289 (Fed. Cir. 1983); In re Thorpe, 227 USPQ 964 (Fed. Cir. 1985); MPEP 2113.

13. Claims 1, 2, 3/(1,2), 4, 5, 8, and 9 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US 5,948,584 (Hashimoto).

Hashimoto discloses a toner comprising toner particles comprising a colorant, a binder resin, a negative charge control agent, and a wax having a melting point of 75°C, which is within the melting point ranges recited in instant claims 1, 2, 4, and 8. See toner (A) at cols. 26-27 and Table 1. Hashimoto toner (A) is made by a suspension polymerization method

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disclosed at cols. 26-27. The binder resin of the toner comprises a polyester and a styrene-n-butylmethacrylate resin crosslinked with divinyl benzene. The divinyl benzene is used in an amount of about 0.44 wt% based on the amount of binder resin, which is within the amount of 0.005 to 5 % by weight recited in instant claim 4. See toner (A) at cols. 26-27. The amount of 0.44 wt% is determined from the amounts reported at col. 26. The toner binder resin comprises 40 wt% THF insolubles (i.e., component C). See toner (A) in Table 1. The amount of 40 wt% THF insolubles is within the range of 15 to 70% recited in instant claim 3. The amount of the binder resin is about 84 wt% of toner (A). (The amount of about 84 wt% is determined from the amounts reported at col. 26.) Because 40 wt% of the binder resin is THF insolubles, toner (A) comprises about 34 wt% (84 wt% x 40 wt%) of THF insolubles, which is within the range of 20 to 780% by weight recited in instant claim 5.

Instant claims 1, 2, 3/(1,2), 4, 5, 8, and 9 are written in product-by-process format. Hashimoto does not exemplify making a toner by agglomerating primary polymer particles and primary colorant particles as recited in the instant claims. As discussed above, Hashimoto's toner (A) is made by a suspension polymerization method disclosed at cols. 26-27. However, the



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toner disclosed by Hashimoto meets the compositional and physical limitations recited in the instant claims. In addition, Hashimoto discloses that toner (A) has good low-temperature fixability and high temperature anti-offset characteristics. See Table 4 at col. 32, example 7. Hashimoto also discloses that toner images can be fixed without applying a release agent. Col. 32, lines 23-24. These are the same properties sought by applicants. See the instant specification, the paragraph bridging pages 3 and 4. Accordingly, the toner disclosed by Hashimoto appears to be the same or substantially the same as the toner made by the method recited in the instant claims. The burden is on applicants to prove otherwise.

Marosi, supra; Thorpe, supra; MPEP 2113.

14. Claims 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida combined with US 5,741,617 (Inaba' 617).

Yoshida discloses a toner as described in paragraph 12 above, which is incorporated herein by reference. As discussed in paragraph 12, Yoshida's toner Z comprises an ester wax.

Yoshida does not disclose the use of ester waxes as recited in the instant claims. Inaba' 617 discloses wax composition

No. 3, which comprises aliphatic ester waxes 13, 14, and 15, and has a melting point of 74°C. See Wax composition No. 3 at col. 23 and Table 1. Inaba'617 also discloses wax composition No. 1, which comprises aliphatic esters 1, 5, and 10, and has a melting point of 60°C. See Wax composition No. 1 at col. 22 and Table 1. Aliphatic ester waxes 13, 14, and 15 meet the ester waxes recited in instant claims 10-12. Aliphatic ester waxes 1, 5, and 10 meet the ester waxes recited in instant claims 10-14. Inaba'617 discloses that toners comprising said wax compositions have superior low-temperature fixing and anti-offset properties, and form OHP film images of high-quality. Col. 3, lines 56-59 and 65-67. Inaba'617 further discloses that images formed from said toners can be fixed without the application of oil. Col. 3, lines 60-63.

It would have been obvious for a person having ordinary skill in the art to use Inaba'617's wax compositions No. 1 or No. 3 as the ester wax component in the toner disclosed by Yoshida, because that person would have had a reasonable expectation of successfully obtaining a toner having the benefits disclosed by Inaba'617.

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15. Claims 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto combined with Inaba'617.

Hashimoto discloses a toner as described in paragraph 13 above, which is incorporated herein by reference.

Hashimoto does not exemplify the use of ester waxes as recited in the instant claims. However, Hashimoto discloses that the wax can be a "higher aliphatic ester." Col. 12, line 15.

Inaba'617 discloses wax compositions that meet the ester waxes disclosed in instant claims 10-14. The discussion of Inaba'617 in paragraph 14 above is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art to use Inaba'617's wax compositions No. 1 or No. 3 as the wax component in the toner disclosed by Hashimoto, because that person would have had a reasonable expectation of successfully obtaining a toner having the benefits disclosed by Inaba'617.

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16. Claims 17-19, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida combined with US 5,445,910 (Ishikawa).

Yoshida discloses a toner as described in paragraph 12 above, which is incorporated herein by reference.

Yoshida does not exemplify a toner comprising resin particles as recited in the instant claims. However, Yoshida discloses that the toner may be covered with surface additives to improve the fluidity, chargeability, or cleanability of the toner. Col. 31, lines 7-12. The covering ratio of the toner surfaces with the additive is preferably in the range of 5 to 99%. Col. 31, lines 12-15. Yoshida discloses that the additive can be spherical resin particles. Col. 32, line 25.

Ishikawa discloses organic fine particles having a primary particle size of 90 nm and containing a cross-linked copolymer of a fluorinated methacrylate, methylmethacrylate, and 5 wt% of divinyl benzene. Col. 9, lines 4-16. The crosslinked organic fine particles are obtained by a soap-free emulsion polymerization method. The amount of 5 wt% of the divinyl benzene is within the range of 0.005 to 5% by weight recited in instant claim 21. Ishikawa discloses that when its crosslinked organic fine particles are used as a toner surface additive, the toner has excellent image-transfer characteristics and stably provides a series of multicopied images even under environments of high temperature and high humidity. Col. 2, lines 45-56.

Ishikawa does not explicitly disclose that its crosslinked organic fine particles are spherical. However, Ishikawa teaches that when the organic fine particles are preferably spherical in shape, "the toner area coming into contact with a photoreceptor can be smaller, so that the image-transfer characteristics can more be improved." Col. 6, lines 33-37. Ishikawa discloses that said spherically-shaped organic fine particles can be obtained by a soap-free emulsion polymerization method. Col. 6, lines 40-42. As discussed supra, Ishikawa's crosslinked organic fine particles are obtained by a soap-free emulsion polymerization method. Thus, it is reasonable to presume that Ishikawa's crosslinked organic fine particles are spherical. The burden is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

It would have been obvious for a person having ordinary skill in the art to use Ishikawa's crosslinked organic fine particles as a surface additive in the toner disclosed by Yoshida, because that person would have had a reasonable expectation of successfully obtaining a toner having improved image-transfer characteristics and providing many toner images even under environments of high temperature and high humidity.

17. Claims 17-19, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto combined with Ishikawa.

Hashimoto discloses a toner as described in paragraph 13 above, which is incorporated herein by reference.

Hashimoto does not exemplify a toner comprising resin particles as recited in the instant claims.

Ishikawa discloses organic fine particles having a primary particle size of 90 nm and containing a cross-linked copolymer of a fluorinated methacrylate, methylmethacrylate, and 5 wt% of divinyl benzene. The discussion of Ishikawa in paragraph 16 above is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art to use Ishikawa's crosslinked organic fine particles as a surface additive in the toner disclosed by Hashimoto, because that person would have had a reasonable expectation of successfully obtaining a toner having improved image-transfer characteristics and providing many toner images even under environments of high temperature and high humidity.

18. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto combined with US 5,213,932 (Shimazaki).

Hashimoto discloses a toner as described in paragraph 13 above, which is incorporated herein by reference.

Hashimoto does not exemplify a toner comprising a magenta colorant as recited in instant claim 23. However, Hashimoto discloses that the toner may comprise a magenta color such as condensed azo compounds, e.g., C.I. Pigment Red 48:2, 48:3, and 48:4. Hashimoto, col. 15, lines 46-54.

Shimazaki discloses a magenta colorant comprising a mixture of 40 to 60 parts by weight of a rhodamine dye C.I. Solvent Red 49, and 60 to 40 parts by weight of C.I. Pigment Red 48, compound (2). Shimazaki, col. 2, line 55, to col. 3, line 11. Compound (2) meets the limitations of formula (1) recited in instant claim 23. Shimazaki discloses that toners comprising said magenta colorant have good weatherability such as good light fastness and heat-resistance. Shimazaki also discloses that said toners provide clear magenta toner images and satisfactory hue. Col. 1, lines 51-55, and col. 4, lines 54-55.

It would have been obvious for a person having ordinary skill in the art to use Shimazaki's magenta colorant as the

colorant in the toner disclosed by Hashimoto, because that person would have had a reasonable expectation of successfully obtaining a magenta toner having the benefits disclosed by Shimazaki.

19. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto combined with Japanese Patent 59-165069 (JP'069). See the USPTO English-language translation of JP'069 for cites.

Hashimoto discloses a toner as described in paragraph 13 above, which is incorporated herein by reference.

Hashimoto does not disclose the magenta colorant recited in instant claim 24. However, Hashimoto discloses that the toner may comprise a magenta color such as condensed azo compounds. Hashimoto, col. 15, lines 46-47.

JP'069 discloses a magenta colorant that meets the limitations of formula (2) recited in instant claim 24. See the translation, page 1. JP'069 discloses that toners comprising said magenta colorant have the required characteristics for color electrophotography, i.e., high transparency, and provide stable images to heat and light, and images having good spectral



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reflection. See the translation, page 5, line 16, to page 6, line 10.

It would have been obvious for a person having ordinary skill in the art to use JP'069's magenta colorant as the colorant in the toner disclosed by Hashimoto, because that person would have had a reasonable expectation of successfully obtaining a magenta toner having the benefits disclosed by JP'069.

20. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida combined with US 5,328,791 (Ohta).

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto combined with Ohta.

Yoshida discloses a toner as described in paragraph 12 above, which is incorporated herein by reference.

Hashimoto discloses a toner as described in paragraph 13 above, which is incorporated herein by reference.

Neither Yoshida nor Hashimoto discloses that its respective toner has a volume-average particle diameter to number-average particle diameter ratio ( $D_v/D_n$ ) of from 1 to 1.25 as recited in instant claim 25.

Ohta discloses toner particles that have a  $D_v/D_n$  ratio from 1.0 to 1.35, which overlaps the range of 1 to 1.25 recited in instant claim 25. Ohta, col. 2, lines 55-59. The lower value of 1 is within the range of 1 to 1.25. Ohta discloses that said toner particles can be made by a polymerization method similar to that disclosed by Yoshida and Hashimoto. Ohta, col. 5, line 32, to col. 6, line 22. Ohta exemplifies toner particles obtained by said above method having a volume-average particle size of 6.6  $\mu\text{m}$  and a dispersion degree of 1.21. Ohta, example 5. Ohta discloses that the toner particles that have said ratio  $D_v/D_n$  have a uniform particle size, thereby having uniform charge quantity. Ohta discloses that such toners provide images with a stable and uniform concentration of toner, and with high resolution images of fine lines. Ohta, col. 2, line 60, to col. 3, line 2. Thus, the ratio  $D_v/D_n$  appears to be well known in the art as a result-effective variable, the variation of which is presumably within the skill of the ordinary worker in the art.

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It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Ohta, to adjust, through routine experimentation, the particle size of toner particles disclosed by Yoshida or Hashimoto, such that the toner

particles have a ratio of  $D_v/D_n$  within the range of 1 to 1.25 recited in the instant claim, because that person would have had a reasonable expectation of successfully obtaining a toner having uniform charge quantity which is capable of providing stable and uniform density images with high resolution images of fine lines.

21. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida combined with US 6,077,635 (Okado).

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto combined with Okado

Yoshida discloses a toner as described in paragraph 12 above, which is incorporated herein by reference.

Hashimoto discloses a toner as described in paragraph 13 above, which is incorporated herein by reference.

Neither reference discloses that its respective toners have the circularity as recited instant claim 26.

Okado discloses a toner comprising toner particles having a circularity of from 0.920 to 0.995, containing particles with a circularity of less than 0.950 in an amount of from 2% by number to 40% by number, and having a weight-average particle size of from 2.0 to 9.0  $\mu\text{m}$ , preferably from 4.0 to 8.0  $\mu\text{m}$ , as measured

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by a COULTER COUNTER, and a particular external additive.

Col. 6, lines 51-64.

Okado discloses that if the circularity is less than 0.920, the external additive tends to localize on the toner particle surfaces, resulting in unstable image densities. If the circularity is more than 0.995, the external additive is held on the toner particle surfaces with difficulty, resulting in unstable charging which leads to fog formation. Col. 8, lines 52-58. Okado discloses that the toner particles can be obtained by a suspension polymerization method. Col. 10, lines 3-23. Okado's suspension polymerization is the same as that disclosed by either Yoshida or Hashimoto. Okado discloses that the circularity distribution can be controlled by selecting the type and amount of dispersion stabilizer, agitation power, pH of the aqueous phase and polymerization temperature. Col. 10, lines 24-27.

Okado discloses that toners having the weight-average particle size disclosed by Okado provide high quality images. Col. 24, lines 33-38. Okado discloses that toners having a weight-average particle size of less than 2  $\mu\text{m}$  have poor transfer efficiency, resulting in the formation of large quantities of residual toner on the photoconductor, which causes

uneven images and melt-adhesion of the residual toner to the photoconductor. Toners having a weight-average particle size greater than 9  $\mu\text{m}$  provide lower quality images, for example, images with black spots around line images, and tend to cause melt-adhesion of toner to various members. Col. 24, lines 42-50.

Okado discloses that his toner particles combined with his particular external additive can provide fog-free images with superior image-density stability and minute-image reproducibility, without causing deterioration of the toner "in its long term service." Col. 6, lines 11-14. The external additives include (A) inorganic powder having an average particle size of from 10  $\mu\text{m}$  to 400  $\mu\text{m}$  and a shape factor SF-1 of from 100 to 130, and (B) a non-spherical inorganic powder having a SF-1 of greater than 150. Col. 6, lines 57-64.

It would have been obvious for a person having ordinary skill in the art to adjust the parameters in the suspension polymerization method used to obtain Yoshida's toner particles or Hashimoto's toner particles as taught by Okado, such that Yoshida's or Hashimoto's toner particles have a circularity that meets the limitation recited in the instant claim to adjust, through routine experimentation, the particle size of said

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resultant toner particles such that said resultant toner particles have a weight-average particle size of 4.0 to 8.0  $\mu\text{m}$ ; and to add Okado's particular external additive to said resultant toner particles. That person would have had a reasonable expectation of successfully obtaining a toner having the benefits disclosed by Okado.

22. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida combined with US 6,074,794 (Fushimi).

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto combined with Fushimi.

Yoshida discloses a toner as described in paragraph 12 above, which is incorporated herein by reference.

Hashimoto discloses a toner as described in paragraph 13 above, which is incorporated herein by reference.

Neither reference discloses that its respective toner has a volume average particle size as recited in instant claim 28. Nor do they disclose the particle size distribution recited in instant claim 28.

Fushimi discloses toner particles having a volume average particle diameter of 8.1  $\mu\text{m}$  and comprising 20% by number of particles having a diameter of 4  $\mu\text{m}$  or less, based on the total

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number of particles, and 0.0 % by volume of particles having a diameter of 12  $\mu\text{m}$  or more. See the black toner in Table 3, col. 10. The volume average particle diameter and particle distribution of 0.0 % by volume are within the ranges of 7 to 10  $\mu\text{m}$  and less than 10 % by volume recited in instant claim 28. Fushimi discloses that toner particles used in a "single-type" or two-component developer may have a volume average diameter of from 5 to 9  $\mu\text{m}$ , and may comprise particles having a diameter of 4  $\mu\text{m}$  or less in an amount of not more than 40% of the total number of toner particles, and particles having a particle diameter of at least 12  $\mu\text{m}$  in an amount of no more than 10% of the total volume of the toner particles. Col. 5, lines 33-39; col. 7, lines 3-4. When the volume average particle diameter is greater than 9  $\mu\text{m}$ , the toner image lacks sharpness due to the toner dispersion of the image. When the volume average is less than 5  $\mu\text{m}$ , the toner is apt to be excessively charged so that the developing efficiency of the toner and image reproducibility are lowered. Col. 5, lines 40-52. When particles having a diameter of at least 12  $\mu\text{m}$  are present in an amount greater than 10% of the total volume of particles, image reproducibility is lowered. Col. 5, lines 52-55. Thus, the volume average particle diameter and particle size distribution are known to be

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result-effective variables, the variation of which are presumably within the skill of the ordinary worker in the art.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Fushimi, to adjust, through routine experimentation, the particle size of toner particles disclosed by either Yoshida or Hashimoto, such that the toner particles have a volume average diameter of 9  $\mu\text{m}$ , and less than 5% by volume of particles having a particle diameter of 15  $\mu\text{m}$  as recited in instant claim 28, because that person would have had a reasonable expectation of successfully obtaining a toner having good developing efficiency and providing sharp color toner images and good image reproducibility.

23. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.



24. Claims 7/3/1 and 48 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1 and 62, respectively, of prior U.S. Patent No. 6,656,653 B2 (Mitsubishi). This is a double patenting rejection.

25. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

26. Claims 1, 2, 3/(1,2), 4-6, 7/3/(2), 8-47, and 49-51 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-119 of U.S. Patent No. 6,656,653 B2 (Mitsubishi).

Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject

matter recited in the claims of Mitsuhashi renders obvious the subject matter recited in the instant claims.

Reference claim 1 recites a toner comprising an agglomerate of particles comprising primary polymer particles and primary colorant particles, and a wax having a melting point of 30 to 100°C. The toner has a THF insoluble content of from 15 to 80% by weight. The primary polymer particles have a THF insoluble content of 15 to 70% by weight, and comprise 0.5 to 5% by weight of acrylic acid or methacrylic acid based on the total amount of primary particles. The toner recited in reference claim 1 meets the toner limitations recited in instant claims 1-3, 6, and 7/3/2. Reference claim 2, which depends on reference claim 1, further requires that the THF insoluble content be from 20 to 70% by weight, which meets the THF insoluble content recited in instant claim 3.

Reference claims 4-10, which depend from reference claim 1, meet the wax limitations recited in instant claims 8-14. Reference claims 11-24, which depend from reference claim 1, meet the primary polymer particles limitation, particulate resin limitation, colorant limitations, and the toner limitations recited in instant claims 15-29.

Reference claim 24 recites a toner comprising an agglomerate of particles comprising primary polymer particles and primary colorant particles, and a wax having a melting point of 30 to 100°C. The primary polymer particles comprise units obtained from one or more monomers and a polyfunctional monomer, which is present in an amount of 0.005 to 5% by weight. The toner recited in reference claim 24 meets the toner limitations recited in instant claim 4.

Reference claim 45 recites a method comprising the steps of: (1) agglomerating primary polymer particles and primary colorant particles to form an agglomerate of particles; (2) aging the agglomerate of particles at a temperature equal to or greater than the Tg of the primary polymer particles; and (3) coating at least a substantial portion of the surface of the agglomerate of particles with a particular resin. The primary particles are obtained by emulsion polymerization of a monomer mixture comprising 0.005 to 5% by weight of a polyfunctional monomer, and the toner comprises a wax having a melting point of 30 to 100°C. The method recited in reference claim 45 meets the steps recited in instant claims 30-32. Reference claims 46-61, which depend from reference claim 45, recite additional process steps that meet the process steps recited in instant

claims 33-47 and 49. Reference claim 119 recites a method of making that meets the process steps recited in instant claim 50.

It would have been obvious for a person having ordinary skill in the art, in view of the subject matter recited in the claims of Mitsuhashi, to make and use a toner as recited in the instant claims by a method of making as recited in the instant claims, because that person would have had a reasonable expectation of successfully obtaining a toner that could be used for developing an electrostatic latent image in an electrostatic imaging process.

27. Claim 4 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 21, and 31 of copending Application No. 09/737,579 (Application'579).

Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter recited in the claims of Application'579 renders obvious the subject matter recited in instant claim 4.

Reference claim 21, which depends from reference claim 1, recites a toner comprising an agglomerate of particles comprising at least primary polymer particles and primary

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colorant particles, and at least one layer of a particulate resin coated on a substantial portion of the surface of said agglomerate. The primary polymer particles comprise a wax and are crosslinked by a polyfunctional monomer in an amount of from 0.005 to 5% by weight, which meets the amount recited instant claim 4. Reference claim 31, which depends from reference claim 1, further requires that the wax have a melting point of 30 to 100°C.

It would have been obvious for a person having ordinary skill in the art, in view of the subject matter recited in the claims of Application'579, to use a wax having a melting point of 30 to 100°C as the wax ~~in the toner~~ recited in reference claim 21, because that person would have had a reasonable expectation of successfully obtaining a toner that could be used for developing an electrostatic latent image in an electrostatic imaging process.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

28. Claims 2 and 3/2 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting

as being unpatentable over claims 1, 20, and 31 of copending Application'579.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter recited in the claims of Application'579 renders obvious the subject matter recited in instant claims 2 and 3/2.

Reference claim 20, which depends from reference claim 1, recites a toner comprising an agglomerate of particles comprising at least primary polymer particles and primary colorant particles, and at least one layer of a particulate resin coated on a substantial portion of the surface of said agglomerate. The primary polymer particles comprise a wax and have a THF insolubles content of from 15% to 80% by weight. The amount of 15% by weight is within the ranges recited in instant claims 2 and 3. Reference claim 31, which depends from reference claim 1, further requires the wax have a melting point of 30 to 100°C.

It would have been obvious for a person having ordinary skill in the art, in view of the subject matter recited in the claims of Application'579, to use a wax having a melting point of 30 to 100°C as the wax in the toner recited in reference claim 20, because that person would have had a reasonable

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expectation of successfully obtaining a toner that could be used for developing an electrostatic latent image in an electrostatic imaging process.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

29. Claims 1, 3/1, 5, 17, and 19 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 20, and 31 of copending Application'579 in view of Diamond, Handbook of Imaging Materials, pp. 165-168.

This is a provisional obviousness-type double patenting rejection.

The reference claims of Application'579 recite a toner as described in paragraph 28 above, which is incorporated herein by reference. The amount of 15% by weight is within the ranges recited in instant claims 3 and 19. See reference claims 1 and 20.

Reference claim 20 does not recite that the toner has a THF insoluble content of from 15 to 80% by weight as recited in instant claim 1. Instant claim 5 recites a range of from 20 to

70% by weight. However, as discussed above, reference claim 20 recites that the primary polymer particles have a THF insoluble content of from 15% to 80% by weight. Diamond discloses that usually 90% or more of the toner is the polymer resin, i.e., the toner binder resin. See Diamond, p. 168. Because the toner claimed in Application'579 comprises primary polymer particles having a THF insoluble content of 80% by weight and because the primary polymer particles make up the toner binder resin of the toner, it is reasonable to presume that the toner comprising said primary polymer particles have a THF insoluble content within the ranges recited in instant claims 1 and 5. The burden is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

Reference claim 31, which depends from reference claim 1, further requires that the wax have a melting point of 30 to 100°C.

It would have been obvious for a person having ordinary skill in the art, in view of the subject matter recited in the claims of Application'579, to add a wax having a melting point of 30 to 100 °C to the toner recited in reference claim 20, because that person would have had a reasonable expectation of successfully obtaining a toner that could be used for developing



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an electrostatic latent image in an electrostatic imaging process.

30. Claims 6, 15, 16, 18, and 20-28 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 20, and 31 of copending Application'579 in view of Diamond, Handbook of Imaging Materials, pp. 165-168, further in view of the subject matter recited in the claims 2, 3, 10, 12, 16-18, 21-23, 33, 35, 36, 39, 41, 43, 45, and 46 of Application'579.

This is a provisional obviousness-type double patenting rejection.

The subject matter recited in reference claims 1, 20, and 31 in view of Diamond renders obvious a toner as described in paragraph 29 above, which is incorporated herein by reference.

Reference claim 16, which depends from reference claim 1, further requires that the primary polymer particles comprise units obtained from a monomer having a Bronsted acidic group or basic group, which meets the monomers recited in instant claim 6. Reference claim 33, which depends from reference claim 1, requires that the recited wax be present in an amount

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from 1 to 35 parts by weight per 100 parts by weight of binder resin, which is within the range of 1 to 40 parts by weight recited in instant claim 9. Reference claim 12, which depends from reference claim 10, which in turn depends from reference claim 1, requires that the primary particles be obtained by an emulsion polymerization using a particulate wax as seed, wherein the wax has a volume-average particle diameter of 0.01 to 3  $\mu\text{m}$ , which is within the limitations recited in instant claims 15 and 16. Reference claim 39, which depends from reference claim 1, requires that the toner be negatively charged, which is within the limitation of a negatively charged toner recited in instant claim 18. Reference claim 22, which depends from reference claim 1, requires that the recited particulate resin have a THF insoluble content of from 5 to 70% by weight, which is within the range recited in instant claim 20.

Reference claims 21 and 23, both of which depend from reference claim 1, require that the primary polymer particles and particulate resin be crosslinked by a polyfunctional monomer in an amount of from 0.005 to 5% by weight, which is within the ranges recited in instant claim 21. Reference claim 3, which depends from reference claim 1, requires that the layer of

particulate resin be substantially free of wax, which is within the amount recited in instant claim 22.

Reference claims 35 and 36, both of which depend from reference claim 1, require that the primary colorant particles comprise a colorant that meets formulas (I) or (II) recited in instant claims 23 and 24, respectively. Reference claims 41, 43, 45 and 46, each of which depends from reference claim 1, require that the toner recited in reference claim 1 have a ratio of volume-average diameter to number average particle diameter of 1 to 1.25, a "50% circular degree" of from 0.95 to 1, and a volume-average particle diameter and size distribution, respectively, which are within the ranges recited in instant claims 25-28, respectively.

It would have been obvious for a person having ordinary skill in the art, in view of the subject matter recited in Application'579 and the disclosure in Diamond, to make and use a toner that meets the limitations recited in the instant claims, because that person would have a reasonable expectation of successfully obtaining a toner that could be used for developing an electrostatic latent image in an electrostatic imaging process.

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31. Claims 8 and 10-14 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 20, and 31 of copending Application'579 in view of Diamond, Handbook of Imaging Materials, pp. 165-168, further in view of Inaba'617.

This is a provisional obviousness-type double patenting rejection.

The reference claims in Application'579, in view of the Diamond, render obvious a toner as described in paragraph 29 above, which is incorporated herein by reference.

The reference claims do not recite a wax as recited in instant claims 8 and 10-14. Inaba'617 discloses wax compositions that have a melting point that is within the range recited in instant claim 8 and within the range recited in reference claim 31 of Application'579. Inaba'617's wax compositions meet the wax limitations recited in instant claims 10-14. The discussion of Inaba'617 in paragraph 14 above is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Inaba'617, to use Inaba'617's wax compositions No. 1 or No. 3 as the wax component in the toner rendered obvious over the subject matter claimed in

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Application'579 in view of Diamond because that person would have had a reasonable expectation of successfully obtaining a toner having the benefits disclosed by Inaba'617.

32. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The central fax phone number is (703) 872-9306.

Any inquiry of papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLD

Jul. 9, 2004

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